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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,717	12/21/2001	Edward W. Taylor JR.	NCI 8062US	5796

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EXAMINER

DICUS, TAMRA

ART UNIT

PAPER NUMBER

1774

DATE MAILED: 09/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/036,717	Applicant(s) EDWARD W. TAYLOR JR	
	Examiner Tamra L. Dicus	Art Unit 1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23, 45-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2 & 3</u> . | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 46 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 46 recites the limitation "the substrate". There is insufficient antecedent basis for this limitation in the claim. Claim 1 does not include a substrate, claim 1 is "for a substrate".

Therefore, claim 46 is confusing.

Claim Objections

4. Claim 45 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 45 is confusing because it does not appear to further limit independent claim 1.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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6. Claims 1, 45, 49, 52 and 53 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 4,265,953 to Close.

7. Close teaches an intumescent stressed skin composite material that comprises a lower intumescent material (equivalent to active fire protective material) and an upper ablative material. See Figure 5. Close provides a substrate of metal foils or mesh including glass or ceramic fibers or fabrics is used (col. 2, lines 3-20).

8. The exposure of heat to the material is taught. The following properties or functions are inherent since the same material is used as Applicant claims:

- a. The ablative material forms an open cell matrix... (instant claim 1)
- b. The system protects protection for hyperthermal conditions... (instant claim 1)
- c. The ablative material swells by about 10%-100%... (instant claim 49)
- d. The active fire-protective material swells when exposed... (instant claim 52)
- e. The ablative material swells by about 10%-100%...(instant claim 53)

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 2, 5-7, 11-14, 14, 17, 18-23, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,265,953 to Close in view of USPN 5,356,568 to Levine.

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11. Close essentially teaches the claimed invention, as applied above. Close is silent to the percent refractory fillers of 7% included in instant claim 2. However, Levine teaches intumescent heat-and fire-resistant composition and substrate coated comprising up to 10.3% inorganic ceramic fibers (falling in Applicant's range) in the intumescent coating (see patented claim 5). Hence, it would have been obvious to one of ordinary skill in the art to modify the composite of Close to further include ceramic fillers of 7% since Levine teaches a conventional percentage of ceramic added to intumescent coatings as cited above. The property of increasing reradiation provided by the filler of instant claim 6 is inherent since the same materials are used as Applicant.

12. The process limitation, that the system "is capable of protecting against jet fires...", is not dispositive of the issue of patentability of the present article claims (instant claim 7).

13. Regarding claim 48, Close does not teach blowing agent range of 10 to 25%. Levine teaches blowing agents and resins may be added between 6 and 12%, falling in Applicant's range. See col. 3, lines 10-20. It would have been obvious to one of ordinary skill in the art to modify the composite of Close to further include a blowing agent since Levine teaches it is conventional to do so as cited above.

14. Regarding claims 14 and 17, the process limitation that the system is "capable of protecting a substrate from a jet fire/against jet fires", is not dispositive of the issue of patentability of the present article claims.

15. Regarding the thickness Close does not state the thicknesses of the upper and lower layers as recited in instant claims 11-13 and 18-23. However, it would have been obvious to one of ordinary skill in the art to produce thicknesses above 1 mm, since it has been held that

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discovering an optimum value of a result effective variable involves only routine skill in the art.

In re Boesch, 617 F.2d 272.

16. Claims 3-4, 14-15, and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,265,953 to Close in view of USPN 5,356,568 to Levine and further in view of USPN 4,216,136 to Stayner.

17. Close essentially teaches the claimed invention, as cited above, but is silent to adding specific filler percentages from 7 –25% as instant claims 3-4, 14-15, and 54, and the filler glass, graphite, or ceramic of claim 16. However, Stayner teaches fire retardant resin compositions (equivalent to ablative material) where glass fillers are added in the range from 1-30% at col. 2, lines 1-5, falling in Applicant's range. It would have been obvious to one of ordinary skill in the art to modify the composite of Close to further include filler percentages since Stayner teaches it is conventional to add as cited above.

18. Claims 8, 18, and 50-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,265,953 to Close in view of USPN 5,433,991 to Boyd, Jr. et al. (Boyd).

19. Close essentially teaches the claimed invention, as applied above. Close teaches a metal mesh as in instant claim 51 at col. 2, line 9. Close does not explicitly state a mesh or fabric is embedded as instant claims 8 or 18, nor that it is either graphite fabric (instant claim 50) or metal mesh (instant claim 51). Boyd teaches reinforcement system for mastic intumescent fire protection coatings comprising a hybrid mesh fabric. The intumescent coating 102 has a mesh 104 embedded in the coating, where graphite fibers and at col. 2, lines 45-65. At col. 2, lines 3-7, Boyd explains it is desirable to obtain the benefits of mechanically attached wire mesh without as much added cost as the mesh with coatings. Therefore, it would have been obvious to one of

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ordinary skill in the art to modify the composite of Close to provide mesh embedded whether of graphite fabric or metal mesh for the purpose 1) to provide a coating with reinforcements with suitable materials such as graphite/metal mesh/fabric as taught by Boyd at col. 1, lines 10-15 and col. 2, lines 40-65.

20. Claims 46 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,265,953 to Close in view of USPN 5,094,887 to Bagdasarian.

21. Close essentially teaches the claimed invention as above. Close does not teach adding a primer layer (claim 46) or topcoat (claim 47). Bagdasarian teaches a method of spraying a mixture including primer to form an ablative coating. At col. 4, lines 5-10, a primer is coated over (is a functional equivalent to a topcoat) an ablative layer to improve the adhesion to the ablative layer. Hence it would have been obvious to one of ordinary skill in the art to modify the composite of Close to provide a primer layer or topcoat because Bagdasarian teaches the addition of a primer improves adhesion as cited above.

22. Claims 1, 7, 8, 45, 49, 52 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,493,945 to Feldman in view of USPN 5,094,887 to Bagdasarian.

23. Feldman teaches a thermal protective system that comprises an enveloped active thermal protective material such as intumescent materials (equivalent to active fire protective material), which is equivalent to a lower and an upper fire protective material. Embedding coating material in mesh is also taught. See col. 6, lines 60-68, col.2, lines 46-68 and col. 1, lines 35-40. The envelope of Feldman does not have an upper ablative material over the intumescent material. Bagdasarian teaches a method of applying an ablative material over substrates subjected to high heat at col. 1, lines 20-43. It would have been obvious to one of ordinary skill in the art to

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modify the system of Feldman to further include an ablative coating as the upper layer because Bagdasarian teaches application of an ablative coating provides further thermal protection at col. 1, lines 55-57.

24. The following properties or functions are inherent since the same material is used as

Applicant claims:

- f. The ablative material forms an open cell matrix... (instant claim 1)
- g. The system protects protection for hyperthermal conditions... (instant claim 1)
- h. The ablative material swells by about 10%-100%... (instant claim 49)
- i. The active fire-protective material swells when exposed... (instant claim 52)
- j. The ablative material swells by about 10%-100%...(instant claim 53)

25. Addressing claim 7, the process limitations that the system “is capable of protecting against jet fires...”, is not dispositive of the issue of patentability of the present article claims.

26. Regarding the thickness of the lower intumescent material of claims 9 and 10 from 1 to 15 mm, Feldman teaches at col. 2, lines 55-62, the thickness of the layer is dependent upon the material used. It would have been obvious to one of ordinary skill in the art to modify the thickness of the lower layer because Feldman teaches thickness is dependent upon the material as cited above.

27. Claim 3-4, 11-16, 19-23, and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,493,945 to Feldman in view of USPN 5,094,887 to Bagdasarian and further in view of USPN 4,216,136 to Stayner.

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28. Feldman essentially teaches the claimed invention, but is silent to adding specific filler percentages from 7 –25% as instant claims 3-4, 14-15, and 54 and the filler glass, graphite, or ceramic of claim 16. However, Stayner teaches fire retardant resin compositions (equivalent to ablative material) where glass fillers are added in the range from 1-30% at col. 2, lines 1-5, falling in Applicant's range. It would have been obvious to one of ordinary skill in the art to modify the system of Feldman to further include filler percentages since Stayner teaches it is conventional to add as cited above.

Regarding the thickness Feldman does not state the thicknesses of the upper and lower layers as recited in instant claims 11-13 and 18-23. However, it would have been obvious to one of ordinary skill in the art to produce thicknesses above 1 mm, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272.

Conclusion

29. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USPN 6,001,437 to Thorpe et al. teaches method of making high-temperature glass fiber. USPN 5,750,927 to Balatazar teaches a fire protection arrangement. USPN 5,206,088 to Raevsky teaches an ablative-intumescent system with an intumescent coating over an ablative coating.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamra L. Dicus whose telephone number is (703) 305-3809. The examiner can normally be reached on Monday-Friday, 7:00-4:30 p.m., alternate Fridays.

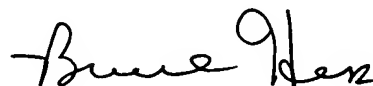
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on (703) 308-0449. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-8329 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Tamra L. Dicus
Examiner
Art Unit 1774

August 18, 2003

A handwritten signature in black ink, appearing to read "Bruce Hess", written in a cursive style.

BRUCE H. HESS
PRIMARY EXAMINER